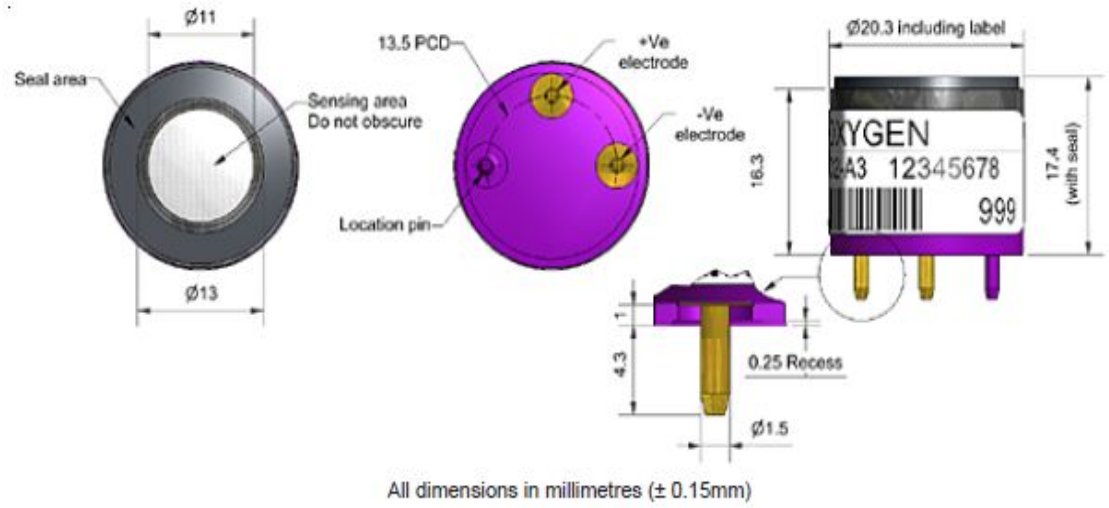
O2-A3 Oxygen Sensor

Figure 1 Schematic Diagram of O2-A3



vertical view upward view lateral view

function		
output	Output(μA) at 22℃ times 20.9%O_2	55~85
Reaction time	From 20.9% to 0%O_2 ^{2} t90 time (s) (47W load	< 15
zero point current	resistance) Output(μA) in $_2$ 99.99%N at 22℃	< 2.5
life span		
Output drift	Change percentage over 3 months	< 2
working life	Output down to 20.9% Number of months $_O$ original output 85%	> 36
environment		
Humidity sensitivity	Oxygen change percentage: 0~95%RH,40℃	< 0.7
CO_2 sensitivity	5% CO_2, output variation percentage/CO_2 concentration 20	0.1
Pressure sensitivity	kPa, output variation percentage/pressure variation percentage	< 0.1
key parameter		
temperature range	℃	-30~55
pressure limit	kPa	80~120
Humidity range	Continuous relative humidity percentage (0~99%RH in the short term)	5~95
Storage period	Number of months for preservation from 3 to 20℃ (to be kept in a sealed tank)	6
load resistance	Ω (recommend)	47~100
altitude	mm (including foam gasket)	17.4
weight	g	< 16

Figure 2. Temperature Characteristics of the Sensor in Air

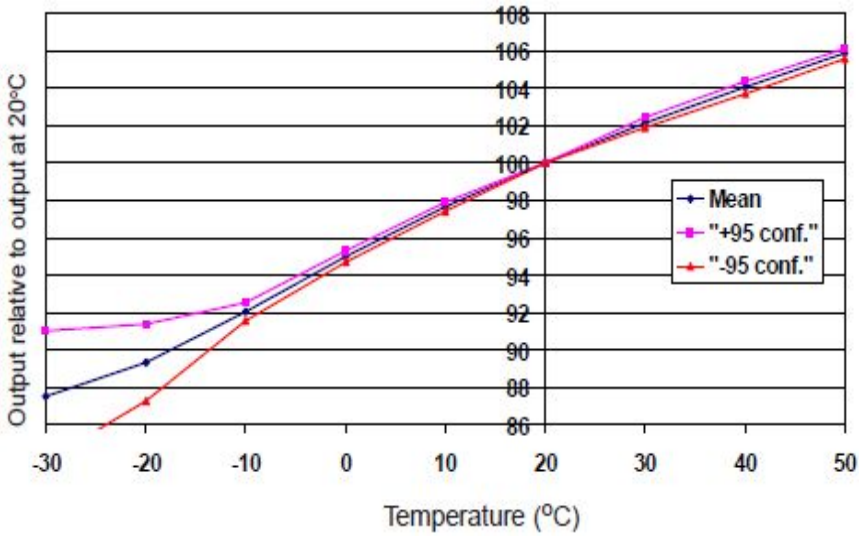


Figure 2 shows the sensor output variation caused by temperature changes in 20.9% oxygen. Figure 2 shows the mean of the outputs and the ±95% confidence interval (see Reference 20℃).

All capillary oxygen sensors exhibited signal variations with temperature. Figure 2 also shows the O2-A3 repeatable 95% confidence interval.

Figure 3 Pressure Transient Performance

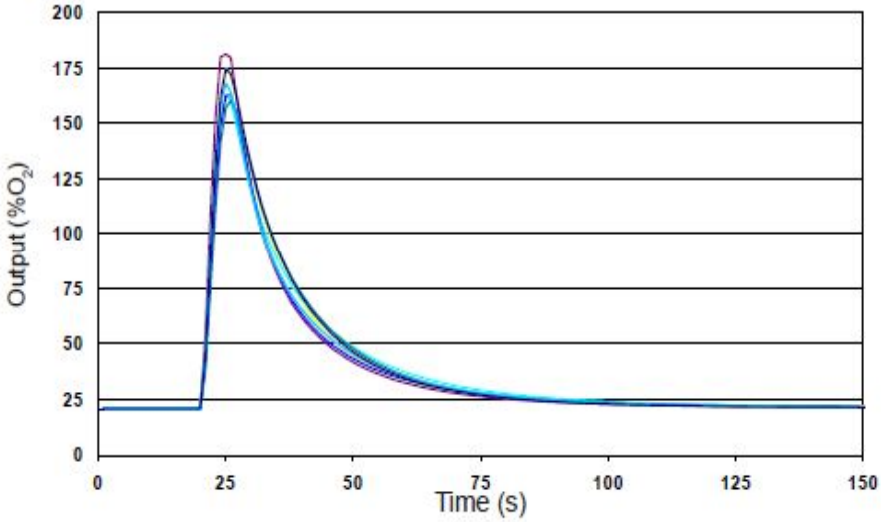
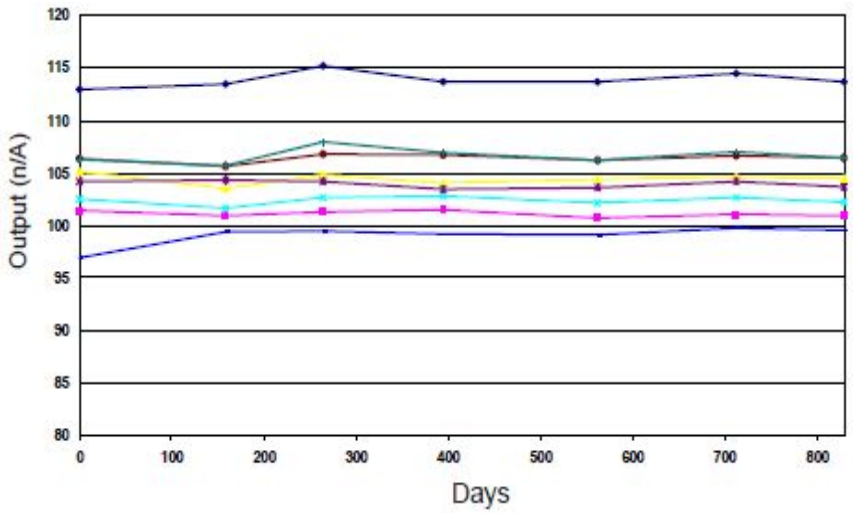


Figure 3 shows the recoverable signal transient process caused by a pressure change of 25kPa. A negative transient is produced by a negative pressure change.

The final output deviation is less than 10% of the pressure change, so a 10kPa pressure change will cause an output deviation of less than 1% (<0.2% oxygen).

Figure 4 Long-Term Stability



The mass flowmeter instrument sensor demonstrates superior long-term stability. No periodic calibration is required as long as the temperature compensation is correct.

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